RESPONSE TO COMMENTS
REGARDING THE REISSUANCE OF THE FOLLOWING NPDES PERMIT
SOLUTIA INC. MA0001147

Introduction:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited public comments from December 14, 2007 through January 12, 2008 on the draft National Pollution Discharge Elimination System (NPDES) permit to be issued to Solutia Inc. During the public-notice (comment) period EPA-New England received comments from Kathleen Keohane of the Massachusetts Department of Environmental Protection (MassDEP) and Andrea Donlon of the Connecticut River Watershed Council (CRWC). Additionally, EPA attempted to respond to unofficial comments that were received after the public comment period from Alan Stratton, Environmental Protection Lead of Solutia Inc.

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments (RTC) received on the Draft NPDES Permit (MA0001147) and details any changes made to the public noticed Draft Permit as a result of the comments. EPA's decision-making for this permit has benefited from the comments submitted. The information and arguments did not result in any substantial new changes to the permit. EPA did, however, improve certain requirements as a result of the comments raised. These improvements are summarized below and are reflected in the Final Permit. The analyses underlying these changes are explained in the responses to individual comments that follow.

Additionally, on September 29, 2008 EPA issued the most recent version of the Multi-Sector General Permit (MGSP) for Stormwater Discharges Associated with Industrial Activity. Part I.B.3., Part. I.B.8., and Part I.B.9. of the Draft Permit, which referenced the 2006 proposed MSGP, were updated to reference the final 2008 MSGP.

Changes Made to the Final Permit as a Result of Public Comments

1) The language in the toxicity test footnotes of the Final Permit [see Parts I.A.1.- I.A.8.] was modified to be consistent with the Fact Sheet and allow for a reduction in whole effluent toxicity (WET) testing requirements on a given outfall after at least two (2) WET tests.
2) The dry weather maximum daily and monthly average flow limits for Outfall 009 [see Part I.A.1.] were decreased to 0.2 million gallons per day (MGD) and 0.15 MGD, respectively.
3) The wet weather sampling location for Outfall 009 [see Part I.A.2.] was changed from a single sample at the discharge point to two separate samples, one from catch basin 561 and one from catch basin 573. Each monitoring period the permittee must submit two DMRs, each containing the sampling results from one of the aforementioned catch basins.
4) The dry weather reporting frequency for flow for Outfall 017 [see Part I.A.3.] has been increased from once per month to three times per month for the months of March through November, inclusive.
5) Dry weather monitoring requirements at a frequency of once (1) per year for zinc, copper, cyanide, chloroform, methanol, dichlorobromomethane, chlorobenzene, and the PCB's

Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 were added to Outfalls 009 and 017 [see Part I.A.1. and I.A.3.] These samples shall be analyzed using the applicable minimum levels and test methods from Appendix VI of EPA's Remediation General Permit. After five years and five (5) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

6) Wet weather monitoring requirements at a frequency of once (1) per year for copper, cyanide, chloroform, methanol, dichlorobromomethane, chlorobenzene, and the PCB's Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 were added for all storm water outfalls [see Part I.A.2. and Parts I.A.4-I.A.7.] These samples shall be analyzed using the applicable minimum levels and test methods from Appendix VI of EPA's Remediation General Permit. After five years and five (5) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.
7) Twice (2) a year dry weather reporting requirements were added to Outfall 021S for whole effluent toxicity, the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 and the 43 volatile and inorganic compounds listed in Table II (*Volatiles)* and III of Appendix D at 40 CFR Part 122. Additionally, the permittee is required to sample Outfall 021S for priority pollutants within the first six months of the effective date of the permit [see Part I.A.8.]. As indicated in Part I.A.8., the permittee is only required to record on the DMR the results for zinc, copper, cyanide, chloroform, methanol, dichlorobromomethane, chlorobenzene, and the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260. These samples shall be analyzed using the applicable minimum levels and test methods from Appendix VI of EPA's Remediation General Permit. After five years and ten (10) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.
8) A wet weather yearly monitoring requirement for E. coli was added for all storm water outfalls [see Part I.A.2. and Parts I.A.4-I.A.7.].
9) Wet weather sampling requirements for WET testing was added for Outfalls 009 and 017. [see Part I.A.2. and Part I.A.4.]
10) The sample month in which to conduct WET testing was modified from May to August for all dry and wet weather outfalls. [see Parts I.A.1-I.A.8.]
11) The Final Permit has been clarified at Part I.A.8.l. to prohibit the discharge of contaminated groundwater.
12) Part I.B.8. has been modified to "The SWPPP shall also meet, to the maximum extent practicable, the general SWPPP requirements of the most current version of the MSGP. These are located at Part 5 of the 2008 MSGP."
13) Part I.B.2. of the Final Permit has been modified from "The permittee shall certify that the SWPPP has been completed or updated and that it meets the requirements of the permit" to "The permittee shall certify that the SWPPP has been completed or updated, that it meets the requirements of the permit, and that it reduces the pollutants discharged in storm water to the maximum extent practicable."
14) The language of Part I.A.11.c. has been clarified to read "That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic

pollutant which was not reported in the permit application and which may contribute to a discharge of pollutants to waters of the United States."

Comments from MassDEP

Comment No. 1

The toxicity test protocol (Attachment A) should be the May 2007 revision. All facilities will start using this protocol in January 2008.

Response to Comment No. 1

The Final Permit retains the Freshwater Acute Toxicity Test Procedure and Protocol (Attachment A) from the Draft Permit. The protocol referenced in the above comment is the Freshwater Chronic Toxicity Test Procedure and Protocol, which was revised in May 2007 and became effective on January 1, 2008. The Final Permit contains no requirements for chronic toxicity testing. Acute toxicity testing is required by the Final Permit at all dry and wet weather outfalls once per year.

Comment No. 2

The toxicity test footnotes should include the conditions described in the fact sheet that would allow a permit modification for a reduction in toxicity testing requirements on an outfall after two satisfactory toxicity tests.

Response to comment No. 2

The footnotes have been updated to contain the same condition as described in Part VI.C.7. of the Fact Sheet. This language is as follows: "After at least two (2) WET tests showing no toxicity for Outfall [insert number], the permittee may submit to EPA and MassDEP a written request for a permit modification of its toxicity testing requirements. EPA and MassDEP will review the results of the toxicity tests and determine if further testing is required for this outfall. The permittee is required to continue testing as specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from EPA indicating a change in the permit conditions."

Comments from the Connecticut River Watershed Council

Comment No. 3

Though this section of the river doesn't have too many recreational users (because it lies between dams), I have spoken to a couple people who have canoed along this length. Therefore, recreational use of the river is present.

Response to Comment No. 3

EPA agrees that this segment of the river is used for recreational purposes. In order to assess whether this segment of the river meets requirements for designated uses, the MassDEP Division of Watershed Management (DWM) conducted fecal coliform and *E. coli* bacteria monitoring between April and October 2003 at a site downstream from 13 CSOs and just upstream from the USGS gage at Indian Orchard (CH06– River Street/West Street bridge, Springfield/Ludlow). The results from these samples indicate a maximum *E. coli* bacteria count of 126 cfu/100 mL and a geometric mean of 35.4 cfu/100 mL. The MassDEP Chicopee River Watershed 2003 Water Quality Assessment Report (http://www.mass.gov/dep/water/resources/wqassess.htm#wqar) concludes that, "Given the low *E. coli* bacteria counts the *Primary* and *Secondary Contact Recreation Uses* are assessed as support. Due to the presence of CSOs both *Primary* and *Secondary Contact Recreation Uses* are listed with an 'Alert Status.' Given the lack of objectionable conditions the *Aesthetics Use* is assessed as support."

EPA notes that, in order to monitor for possible sources of the bacteria levels in the Chicopee River, the Final Permit contains wet weather monitoring requirements for *E. coli* at all storm water outfalls (refer to Response to Comment No. 13).

Comment No. 4

In an upcoming book on freshwater mussels in the Connecticut River watershed, author Ethan Nedeau (contact information at http://www.biodrawversity.com/) identifies eight species of mussels found in the Chicopee River watershed. Two are species of special concern in Massachusetts (the triangle floater and the creeper), and one is endangered in Massachusetts (the brook floater). It may be useful for MassDEP to make sure none of these species, or their host fish, are likely to be impacted by discharges from Solutia.

Response to Comment No. 4

EPA contacted both the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) regarding the impact of this permit on federally listed species. The only federally listed species of mussel found in Massachusetts is the dwarf wedgemussel, which USFWS informed EPA was not present in the vicinity of the discharge.

The species of mussels mentioned in this comment are regulated by the state, and therefore EPA contacted the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife concerning this comment. NHESP states that they are aware of rare mussels within the watershed and within the mainstem Chicopee River upstream from the discharges from Solutia. NHESP is not however, aware of rare mussel occurrences downstream. Even if these species of mussels were to be found downstream, they are not reasonably expected to be harmed by the discharges from Solutia, as long as the discharges comply with the terms of this permit. The following factors contribute to this opinion:

- The effluent permit limits for Outfalls 009 and 017 of the Solutia Facility are as stringent as or more stringent than the current permit. There was no change in the outfall locations.
- The permit meets all Massachusetts Surface Water Quality Standards and includes monitoring and reporting requirements to ensure compliance.
- Even under adverse conditions of low river flow and maximum facility discharge, a dilution factor of 13.4 was calculated for the effluent as it enters the Chicopee River.
- The Final Permit requires monthly monitoring for total residual chlorine at Outfall 009 and 017.
- The Final Permit requires quarterly monitoring for total suspended solids and total recoverable zinc and yearly monitoring for chloroform, PCBs, dichlorobromomethane, and methanol from all stormwater outfalls.
- The Final Permit requires that the permittee conduct yearly acute WET testing at all outfalls. Each test must include the daphnid, *Ceriodaphnia dubia*, and fathead minnow, *Pimephales promelas*, in accordance with EPA Region I protocol.

Comment No. 5

Just as a reminder to EPA and MassDEP, MassDEP's 1998 Water Quality Assessment for the Chicopee River Watershed on page 109 states, "Reissue the Solutia, Inc. NPDES permit with appropriate limits and monitoring requirements. The facility should develop and implement a storm water pollution prevention plan. The company should also be required to report on their actual water use (inflow vs. outflow) as well as document and report on the consumptive loss of water related to MASSPOWER. Water conservation efforts should be maximized to reduce consumptive loss. Eliminate outfalls that now belong to Nova Chemical, Inc. or have been abandoned and update permit with current outfalls and locations." (see http://www.mass.gov/dep/water/resources/wqassess.htm)

Response to Comment No. 5

EPA has noted the recommendations listed in MassDEP's 1998 Water Quality Assessment of the Chicopee River Watershed and has taken these recommendations into account in the re-issuance of the Solutia NPDES permit. The Draft and Final Permits contain appropriate limits and monitoring requirements and require the facility to develop, implement, and update a storm water pollution prevention plan (SWPPP) to control the discharge of pollutants through storm water. In addition, the Draft Permit was updated to include current outfalls and locations and does not provide coverage for those outfalls no longer in use or owned by Solutia. EPA does not believe that the current water use at the facility requires the reporting of inflow vs. outflow to meet the requirements of the NPDES program and is not requiring documentation on consumptive water loss in the NPDES permit. Additionally, the recently finalized MassDEP Chicopee River Watershed 2003 Water Quality Assessment Report does not include the recommendations noted above. EPA maintains that the Final Permit upholds the water quality of the Chicopee River and Bircham Bend Brook.

Comment No. 6

The permitted **dry** weather flow amounts for outfalls 009 and 017 are much higher than what is currently being discharged. At outfall 009, Attachment B shows the maximum daily flow was 0.142 gallons per day (gpd) and the highest average monthly flow was also 0.142 gpd over the past two years. [Reporting the flows as gpd instead of millions of gallons per day (MGD) might be a typing error?] The draft permit would allow them to discharge a maximum daily amount of 500,000 gpd (written as 0.5 MGD in the permit) and an average monthly amount of 0.2 MGD. At outfall 017, Attachment B shows the maximum daily flow in the last two years was 4.795 MGD and the maximum monthly discharge was 3.838 MGD. The draft permit proposes a limit of 6.0 MGD for a daily maximum and 4.0 MGD for average monthly flow. We recommend that EPA adjust the permitted flow volumes to reflect current daily and monthly flow conditions. NPDES stands for National Pollutant **Discharge Elimination** System, after all. Also, lowering the dry flows would not impact the stormwater flows, which have no proposed flow limit in the draft permit.

Response to Comment No. 6

The goal of the National Pollutant Discharge Elimination System (NPDES) program is to control water pollution by regulating point sources that discharge pollutants into waters of the United States. Historical data (see Attachment B of the Fact Sheet) does not show the flows from Outfalls 009 or 017 causing or contributing to a violation of water quality standards nor does EPA believe a continuation of the limits will cause or contribute to a violation in the future. Regarding Outfall 017, the recorded maximum daily flow, indicated in Attachment B of the Fact Sheet, is 4.8 MGD, which represents 80% of the maximum daily flow limit of 6.0 MGD. The recorded monthly average flow, indicated in Attachment B, is 3.8 MGD, which represents 95% of the monthly average flow limit of 4.0 MGD. In addition, the flow from Outfall 017 is affected by the proportion of water that is utilized by MassPower and, according to Solutia, this volume can vary from 0-1.6 million gallons per day (MGD) and averages 250,000 gallons per day (gpd). Based on past flow data and MassPower's usage of NCCW, the Draft Permit flow limits accurately represent the possible flow range for Outfall 017. EPA shall retain the Draft Permit flow limits for Outfall 017 in the Final Permit.

Attachment B indicates that both the recorded maximum daily flow and monthly average flow for Outfall 009 is 0.142 MGD. This value represents 28.4% of the maximum daily flow limit of 0.5 MGD and 71% of the monthly average flow limit of 0.2 MGD. Although EPA does not expect the Draft Permit flow limits for Outfall 009 to cause or contribute to a water quality violation, EPA has lowered these limits in the Final Permit to be more representative of the discharge. The Final Permit contains a maximum daily flow limit of 0.2 MGD and a monthly average flow limit of 0.15 MGD. These limits were chosen based on a review of the historical data.

EPA has corrected the typing error in Attachment B from gallons per day (gpd) to million gallons per day (MGD).

Comment No. 7

It is not clear from the Fact Sheet if outfalls 009 and 017 are always discharging. Does wet weather sampling also include the same water being discharged during dry weather? It would be best if each discharge source could be monitored independently, before they are mixed.

Response to Comment No. 7

EPA agrees sampling the storm water and non-contact cooling water (NCCW) prior to commingling would present the most accurate data on each type of discharge. The Draft Permit requires dry weather sampling for Outfalls 009 and 017, which shall provide data on NCCW discharges free from storm water influences. This requirement is retained in the Final Permit. According to the facility, NCCW discharges from Outfall 017 are constant, with the exception of department shutdowns. Solutia states that due to "the complex interconnections of NCCW and storm water" they cannot sample storm water for this outfall prior to commingling. Therefore, the Final Permit retains the wet weather sampling requirements included in the Draft Permit.

Regarding Outfall 009, Solutia states that the NCCW discharges are not constant and that, while they do have the ability to sample storm water from a catch basin prior to commingling with NCCW, this catch basin (number 573) does not collect storm water from the entire area that drains to Outfall 009. Meanwhile, catch basin 561 contains NCCW as well as storm water from the remaining portion of the Outfall 009 drainage area at Solutia. Based on the unsafe conditions associated with wet weather sampling at Outfall 009 (see Response to Comment No. 33) and the benefits of sampling storm water prior to commingling, the Final Permit has been modified to include wet weather sampling at catch basins 573 and 561.

Comment No. 8

If outfalls 009 and 017 are always flowing, is there some reason why the facility couldn't measure noncontact cooling water flow continuously, so that the non-stormwater flows are better characterized? A monthly reading seems woefully inadequate.

Response to Comment No. 8

As stated in Response to Comment No. 7, the flow from Outfall 009 is not constant and, as confirmed by the facility, cannot be measured continuously. Solutia states that Outfall 017 also cannot be measured continuously because the outfall discharges non-contact cooling water from a number of internal connections. To provide a full characterization of the non-stormwater flows from Outfall 017 the Final Permit shall retain the monitoring frequency of three (3) times per month from the Existing Permit. From December – February, inclusive, the sampling frequency at Outfall 017 shall remain once (1) per month, as continued from the Existing Permit. Based on the dangerous conditions associated with sampling at Outfall 009, the sampling frequency shall remain once (1) per month. Dry weather sampling at this outfall is only required from March – November, inclusive.

Comment No. 9

The existing permit requires Solutia to test dry weather flows from outfalls 009 and 017 for over 100 priority pollutants. We have not seen the data from these tests, but the Fact Sheet indicates that most pollutants have not been detected, and those that are fall below water quality standards. We support the elimination of a full priority pollutant scan in this draft permit. However, we think that the chemicals known to be released to the environment at this site should still be tested at all outfall pipes, particularly if any of these chemicals, such as PCBs and lead, are persistent in the environment and bioaccumulate in fish and animal tissue.

Response to Comment No. 9

EPA agrees that the Final Permit should not contain a yearly requirement for full priority pollutant scans. As stated in the Fact Sheet, the majority of pollutants have not been detected by the priority pollutant scans. Pollutants that have been detected above the minimum detection level but below the Federal Recommended Water Quality Criteria, which were adopted by the Massachusetts Water Quality Standards (314 CMR 4.05(5)(e)), include: zinc, copper, ammonia, chloroform, methanol, cyanide and dichlorobromomethane. In addition, although the scans show the PCB Aroclor 1260 as "non-detect", the application priority pollutant scan for Outfall 021S (previously Outfall SF) also states that, as part of the RCRA corrective action program, an additional grab sample was taken in August 1994 where the "PCB Aroclor 1260 was detected below the method quantification limit and at an estimated value of 0.19 µg/l."

Based on the detection of low levels of these pollutants, dry weather monitoring requirements for zinc, copper, cyanide, chloroform, methanol, dichlorobromomethane and the PCB's Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 have been added for Outfalls 009 and 017 at a frequency of once (1) per year. Dry weather monitoring requirements for chlorobenzene have also been added for Outfalls 009 and 017 based on the historic presence of this pollutant at this facility. After five years and five (5) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

In addition, wet weather monitoring requirements for these constituents have been added for all storm water outfalls at a frequency of once (1) per year. The Draft Permit wet weather monitoring requirement for total recoverable zinc, based on EPA's 2006 proposed and 2008 final Multi-Sector General Permit (MSGP) will be continued in the Final Permit. The Final Permit will not contain monitoring requirements for ammonia because the average concentration of ammonia detected in the effluent is over 50 times less than the freshwater acute criteria.

Dry weather reporting requirements for Outfall 021S have also been added to the Final Permit. Within the first six months of the effective date of the permit, the permittee is required to test for the 113 Organic Toxic Pollutant and the 15 Other Toxic Pollutants, plus dioxin, listed in Tables II and III of Appendix D to 40 CFR 122. After completion of this test, the permittee is required to sample twice (2) per year for whole effluent toxicity, the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 and the 43 volatile and inorganic compounds listed in Table II (*Volatiles)* and III of Appendix D at 40 CFR Part 122. The permittee is only required to record

the results for zinc, copper, cyanide, chloroform, methanol, dichlorobromomethane, chlorobenzene, the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260, and whole effluent toxicity on the monthly DMR. After five years and ten (10) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

When applicable, samples shall be analyzed using the test methods and minimum levels from Appendix VI of EPA's Remediation General Permit (RGP). Additionally, the permittee shall submit a laboratory copy of the case narrative along with the monthly DMR (see Part I.A.9.k. of the Final Permit).

Comment No. 10

Should Solutia submit documentation to change their pH effluent limits, as explained on pages 9 and 10 of the Fact Sheet, we expect that any proposed changes to the permit would be publicly noticed and there would be opportunity for public review and comment.

Response to Comment No. 10

EPA does not agree that an additional public notice period is necessary if Solutia requests and is granted a change in pH effluent limits. The permit requires the facility to meet in-stream criteria for pH as defined by the Massachusetts Water Quality Standards for Class B waters. The permittee must be in compliance with this requirement and this requirement cannot be removed from the permit. However, the permittee may meet the in-stream criteria either by complying with the permit limits at the point of discharge or by providing calculations demonstrating how alternate limits, due to in-stream dilution, would still be protective of in-stream Massachusetts Standards for pH. The provision that allows this change in pH limits was included in Part I.C. "SPECIAL CONDITIONS - pH Limit Adjustment" of the Draft Permit, which is explained in detail on pages 9 and 10 of the Fact Sheet. As noted in both the Fact Sheet and Draft Permit, both MassDEP and EPA must approve the alternate limits requested by the facility before the pH range will be adjusted. The adjusted pH effluent limit range shall not exceed the Federal Water Quality Criteria of 6-9 standard units. In addition, assuming no claim of confidential business information is made, information concerning the demonstration study or the subsequent change in numerical limits consistent with the terms of the permit is public information and will be made available upon a written request. This provision was available for review and comment during the public notice period. As the public already had the opportunity to comment on this aspect of the Draft Permit, EPA may not hold an additional comment period if and when the change occurs.

Comment No. 11

The temperature limit for outfall 017 should not be higher than the state limit of 83ºF. There should also be a temperature change limit imposed on outfalls 009 and 017. Even if the temperature change does not appear to be close to 5ºF, as Page 9 and Attachment E of the Fact Sheet suggests, the facility should still be required to keep it within a certain limit. Based on the

calculation provided, this will easily be met, so would not be a tremendous burden for Solutia. The Fact Sheet did not indicate the size of the mixing zone.

Response to Comment No. 11

EPA maintains that the temperature limit of 85ºF for Outfall 017, in conjunction with the mixing provided by the receiving water, protects the existing water quality of the Chicopee River. As noted by the above comment, Attachment E of the Fact Sheet, which calculates the estimated downstream temperatures after mixing, does not indicate a potential temperature change of greater than 5ºF. In addition, Part I.A.8.a. states that "The discharge shall not cause a violation of the water quality standards of the receiving waters which have been or may be promulgated." Requirements regarding allowable temperature changes in the receiving water are included in the Massachusetts Surface Water Quality Standards. Based on this information, EPA does not believe that the discharge temperatures at the facility require monitoring for the temperature change of the receiving water and is not including additional temperature requirements in the Final Permit.

The Massachusetts Surface Water Quality Standards do not specify a regulatory mixing zone dimension except that the mixing zone must be "…an area or volume as small as feasible." A number of states including Arkansas, Connecticut, and Michigan define the regulatory mixing zone of a river or stream as one quarter, or 25%, of the cross-sectional area. Assuming the river has a constant velocity, the mixing zone can also be expressed as a flow rate according to the following relation: Flow Rate (cfs) = Velocity (f/s) x Cross-Sectional Area (sf). The following calculations determine the necessary flow rate of the Chicopee River for the discharge from Outfall 017 to meet water quality standards (WQS).

Outfall 017 Information:
Flow Rate = 6 MGD = 9.28 cfs
Max Temperature = 85°F

Chicopee River Information:
Flow Rate for Discharge to meet WQS = Q
Average Temperature = 80°F

$$\frac{(9.28 * 85) + (Q * 80)}{(9.28 + Q)} = 83^{\circ} F$$

$$Q = 6.19 \text{ cfs}$$

These calculations determine the flow rate necessary for the discharge to meet water quality standards to be 6.19 cfs. This flow rate represents 4.95% of the 7Q10 value of 125 cfs (see Response to Comment No. 28), which is below the aforementioned size of certain regulatory mixing zones. Using the relationship between flow rate and cross-sectional area, the size of the mixing zone for this discharge can be expressed as approximately 5%, or $1/20^{th}$, of the cross-sectional area of the Chicopee River.

Comment No. 12

The draft permit requires wet weather monitoring at outfalls 009 and 017. The facility would be required to monitor flow, pH, total recoverable zinc, and total suspended solids (TSS) on a

quarterly basis. The Zn and TSS are Sector C requirements from the Multi-Sector General Permit. It is our understanding that total recoverable zinc is best calculated knowing the hardness of the water. Has the facility tested hardness of their stormwater from these outfalls recently?

Response to Comment No. 12

Water quality criteria for zinc, as described in the National Recommended Water Quality Criteria, are indeed dependent on the hardness of the water. However, it is the hardness of the receiving water, not the discharge water, which is used to calculate hardness dependent metals. Although the MassDEP Chicopee River Basin 2003 Water Quality Assessment Report does not contain hardness data for segment MA36-24, data for segment MA36-25, directly downstream from Solutia, shows levels between 19 and 29 mg/l. In addition, the Water Quality Assessment contains hardness data for multiple upstream segments of the Chicopee Watershed with levels ranging from 8 to 61 mg/l. According to Solutia, there is no data regarding the hardness of the storm water outfalls.

The 2008 final MSGP, upon which the zinc monitoring requirements are based, uses the same calculations as the National Recommended Water Quality Criteria to calculate benchmark monitoring concentrations as a function of hardness. The 2008 MSGP calculates hardness dependent benchmarks in 25 mg/l increments, as presented below:

Water Hardness Level (mg/l)	**Zinc Benchmark (mg/l)**
0-25	0.04
25-50	0.05
50-75	0.08

Based on the low level of hardness in the receiving water and the language in the 2008 MSGP, a benchmark concentration of 0.04-0.08 mg/l should be used by Solutia for comparison with storm water concentrations. The Draft and Final Permits also require analysis of the hardness of the dilution water, which is taken from the Chicopee River, as part of the WET testing requirements. This will provide additional data regarding the hardness of the receiving water.

Comment No. 13

According to page 7 of the Fact Sheet, outfall 017 discharges stormwater from 83.6 acres of the site, including stormwater from the MassPower area. Attachment C to the Fact Sheet shows that this drainage area is 70% impervious. Given that the Chicopee River is impaired for pathogens, and runoff from impervious surfaces has been documented [to] have high bacteria levels in many studies throughout the country, we recommend a period of time during which bacteria testing from stormwater from the site is tested, especially outfall 017, which drains 83.6 acres. The permit application shows fecal coliform levels at 7 and 8 at outfall 017, and 102 colonies/mL at SB01(now called 021S?), but these data reflect one set of results from 1991, over 16 years ago.

Response to Comment No. 13

Based on the above comment and the pathogen impairment of the Chicopee River, EPA has added reporting requirements once per year at all storm water outfalls for *E. coli* to the Final Permit. Refer to Response to Comment No. 3 for more recent information regarding concentrations of bacteria in the Chicopee River. Sampling for this parameter shall occur concurrently with the yearly sampling whole effluent toxicity.

Comment No. 14

The Region well knows that the establishment of effluent limitations for this facility, under the "Best Professional Judgment" method, requires better documentation of its cost/risk balancing fuller explanation [sic] of any tradeoffs it has incorporated into a Draft Permit than has been made public to date. Separate and apart from any water quality-based limitations in the permit, the best practicable control technology (BPT) standard requires that a permit writer must consider "the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application." 40 C.F.R. § 125.3(d). Those considerations have not been aired publicly in this proceeding. Clean Water Act Sections 301 and 402 require no less if the public is to be afforded a full and fair hearing on this Draft Permit. See Natural Resources Defense Council v. U.S. EPA, 863 F.2d 1420, 1425 (9th Cir. 1988) ("[I]n issuing permits on a case-by-case basis using its "Best Professional Judgment," EPA does not have unlimited discretion in establishing permit effluent limitations. EPA's own regulations implementing this section enumerate the statutory factors that must be considered in writing permits.").

Response to Comment No. 14

According to 40 C.F.R. §125.3(c), a permit writer may impose technology-based treatment requirements in a permit on a "case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable." Part V.A. of the Fact Sheet describes how no EPA promulgated effluent limitations apply to the discharges from Solutia and therefore the permit writer is authorized under section 402(a)(1)(B) of the CWA to establish technology-based effluent requirements using best professional judgment (BPJ). Pursuant to section 301 of the CWA, these effluent requirements must meet best practicable control technology (BPT) requirements by July 1, 1977. However, amendments to the CWA require effluent requirements to meet higher levels of standards than BPT by March 31, 1989. These standards are best available technology economically achievable (BAT) for toxic and non-conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants. Thus, BAT and BCT standards were applied in the determination of technology-based limits and requirements in this permit.

The technology-based requirement in the Draft Permit is the storm water pollution prevention plan (SWPPP), along with the subsequent development of best management practices (BMPs). In setting the aforementioned technology-based limits, EPA considered the general SWPPP requirements, Sector C (Chemical and Allied Manufacturing), and Sector Y (Rubber, Miscellaneous Plastic Products and Miscellaneous Manufacturing) of the 2000 final MSGP and 2006 proposed MSGP, which are substantially similar to those in the 2008 final MSGP. While EPA is not bound by the MSGP for the derivation of technology-based requirements in an

individual permit, EPA considered relevant MSGP requirements for this permit. If Solutia were to cover the storm water discharges under the MSGP instead of an individual permit, the technology-based requirements for developing a SWPPP would be the same as listed in the Draft Permit.

Regarding the consideration of cost raised by the comment, EPA finds that the cost of the technology-based requirements based on the MSGP to be affordable and that there are no other equally effective limits that can be achieved at a lower cost, including pollutant reduction and/or at a typical POTW. The technology-based requirements in the Draft Permit were derived from the BAT/BCT analysis determinations used when developing the original regulatory requirements for storm water discharges associated with industrial activities under EPA's General Permits. In a 1992 determination EPA stated that "EPA has determined that all the components of the storm water pollution prevention plan required under today's permits are necessary to reflect BAT/BCT." See 57 FR 41265, Sept. 9, 1992. Additionally, in 1995, EPA made a similar determination when promulgating the MSGP. EPA stated that, "EPA believes the pollution prevention approach is the most environmentally sound and cost-effective way to control the discharge of pollutants in storm water runoff from industrial facilities," See 60 FR 50815, Sept. 29, 1995. As noted by EPA, "This position is supported by the results of a comprehensive technical survey EPA completed in 1979" (*Storm Water management for Industrial Activities*, EPA, September 1992, EPA 832-R-92-006). Finally, in the 2008 MSGP EPA stated that the required stormwater control measures "which discharges must comply with through the implementation of stormwater best management practices (BMPs) chosen in light of best industry practice, are equivalent to the best available control technology economically achievable (BAT), best conventional control technology (BCT), and best practicable control technology (BPT) limits." In the development of the SWPPP and BMPs, it is contemplated that the permittee will research new technologies and/or plan new facilities to be consistent with the goal of overall reduction in the sources of pollutants and will only choose those BMPs that are best suited for the facility.

Comment No. 15

The draft permit for wet weather sampling at outfalls 009 and 017 states that the quarterly wet weather sampling must be taken concurrently with the annual whole effluent toxicity (WET) testing, but that requirement is for dry weather only. I have spoken with you about this over the phone, and you said you would fix the mistake.

Response to Comment No. 15

A yearly wet weather requirement for whole effluent toxicity (WET) testing has been added to Outfalls 009 and 017 in the Final Permit (see Response to Comment No. 17). Therefore, the above statement has been retained in the Final Permit.

Comment No. 16

No rationale was given for the suite of chemicals required to be tested during dry weather at outfalls 009 and 017. For example, why is an annual test for total calcium being required?

Response to Comment No. 16

Part VI – Chemical Analysis, of the Freshwater Acute Toxicity Test Procedure and Protocol (see Attachment A of the Final Permit) states that an analysis of certain parameters and total metals (e.g., hardness, pH, dissolved oxygen, chromium, lead, calcium etc.), shall be performed for each sampling event. EPA has included a requirement for reporting the results of this analysis in the Draft and Final Permits so that EPA has a thorough record of all tests conducted on the discharge sample. The suite of chemicals is the same for all freshwater acute toxicity testing and is not dependent on the facility, receiving water, or sampling conditions.

Comment No. 17

Wet weather monitoring for outfalls 10S, 51S, 14S, 61S, 15S, and 19S requires annual WET testing and the same suite of chemicals required for dry weather testing at outfalls 009 and 017. It doesn't make sense that the noncontact cooling water from outfalls 009 and 017 would be tested for the same chemicals as stormwater from several areas with 100% impervious surface – they aren't likely to have the same constituents, right? It also doesn't make sense that outfall 017, which captures stormwater from 83.6 acres, does not require WET testing during wet weather. We request that WET testing be required at outfalls 009 and 017, on a quarterly basis, during wet weather, in addition to dry weather sampling.

Response to Comment No. 17

EPA agrees that wet weather whole effluent toxicity (WET) testing at Outfalls 009 and 017, in addition to WET testing at the facility's other storm water outfalls, will provide a more complete characterization of the storm water at Solutia. Consequently, wet weather WET testing requirements have been added for Outfalls 009 and 017 in the Final Permit. This sampling shall be required once (1) per year, at the same frequency as the WET testing at the facility's other storm water outfalls. Regarding the suite of chemicals required to be reported with WET test results, please refer to Response to Comment No. 16.

Comment No. 18

It is not clear why the permit for this facility does not have any limit on the WET testing, only that the facility report results to EPA. Also, why is May the month that WET testing is to be sampled? Summer conditions may be more conservative, and therefore more appropriate.

Response to Comment No. 18

EPA maintains that only reporting requirements, and not numerical limitations, for WET testing are necessary at this time. There is no past WET testing data for Solutia. The Draft Permit requires the reporting of WET testing results in order to provide EPA with data regarding the impact of storm water discharges and to determine if there is a reasonable potential for the discharge to cause or contribute to a violation of water quality standards. EPA typically addresses storm water discharges through implementation of Best Management Practices (BMPs), and not through numerical limitations, as the most effective means of pollution control. EPA has issued a memorandum titled "Interim Permitting Approach for Water Quality Based

Effluent Limitations in Storm Water Permits," dated September 1, 1996 (the "1996 memorandum") which explains this rationale. Therefore, if results indicate a reasonable potential for the discharge to cause or contribute to a violation of water quality standards, EPA may reopen and modify the permit, in accordance with 40 C.F.R. §122.62 and §122.63, to include numerical limitations, additional BMPs, or both.

EPA agrees that conditions in the summer may be more appropriate for conducting WET testing. The sample month has been changed from May to August in the Final Permit.

Comment No. 19

The sampling rotation scheme for outfalls 10S, 51S, 14S, 61S, 15S, and 19S is not necessarily justified given the information provided in the Fact Sheet. The outfall locus map in Attachment D was virtually unreadable, no description of the land use for each area was given (other than all are 100% impervious), and there is therefore no way of knowing whether these are truly similar areas with similar possible contaminants.

Response to Comment No. 19

EPA acknowledges that additional information describing the land use of the area surrounding these outfalls could be helpful for the public. The Fact Sheet, at Part VI.B., describes the drainage area for these six outfalls as "almost entirely impervious, and includes the Cytec Industries research building and various recreational areas." EPA has requested that Solutia provide additional information regarding the land use for each individual outfall. The following information was provided by Solutia in response to EPA's request:

10S – This outfall discharges drainage from the parking lot for the R&D facility, access road drains, the grassy area of the Responsible Care Park, and two manholes.
51S – This outfall collects water from one grate on the road behind the R&D facility (low point on east plant property).
14S – This outfall discharges drainage from the loading area for the R&D facility, roof drains from one of the R&D buildings, and access road drains.
61S – This outfall collects water from an acre with one manhole. This is from the former buildings and operations area, which now includes a combination of building pads and gravel surfaces.
15S – This outfall consists of a series of access road drains near the R&D facility.
19S –This outfall collects water from one manhole behind the R&D facility.

These descriptions depict the land use for the area surrounding the storm water outfalls as predominantly parking lots, access roads, grassy areas, roof drains, and gravel surfaces near the R&D facility. Based on this additional information, EPA reaffirms that these outfalls "…discharge similar wastewater based on the comparable nature of the drainage areas and the activities that occur in those areas." In addition, the rotating sampling schedule, which requires the permittee to sample each outfall at least twice within the five year permit cycle, will provide data regarding the specific chemicals present at each of the different outfalls.

Comment No. 20

We do not support a reduction in annual toxicity testing after two satisfactory results, as described on page 11 of the Fact Sheet. Under the rotation scheme proposed for outfalls 10S, 51S, 14S, 61S, 15S, and 19S, a reduction in toxicity testing after two "satisfactory" results (undefined, since there is no proposed limit) would not even allow each outfall to be tested once. Moreover, this is the first permit that requires such sampling of these outfalls, so very little is known about the water quality from these outfall pipes to begin with. In fact, we would prefer more frequent testing than an annual test. This is a very large chemical plant with a long history. The Fact Sheet on page 3 states that the plant also has research and development operations, which indicates that there may be new chemicals and processes happening at any time. At the very least, one set of tests from each outfall should be required before testing is reduced.

Response to Comment No. 20

EPA agrees that a minimum of two (2) WET tests should be collected from each outfall prior to a reduction in monitoring. The language in the Final Permit has been clarified to reflect this requirement (see Response to Comment No. 2). In the Final Permit, the footnote for each outfall with WET testing has been modified to read "After at least two (2) WET tests showing no toxicity for Outfall [insert number], the permittee may submit to EPA and MassDEP a written request for a permit modification of its toxicity testing requirements. EPA and MassDEP will review the results of the toxicity tests and determine if further testing is required for this outfall. The permittee is required to continue testing as specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from EPA indicating a change in the permit conditions."

Comment No. 21

We have received the copy of the permit application that you sent us, thank you. The permit application was prepared in 1998, and relies on analytical data from 1991. EPA has not processed this application until now, and we are now 10 years away from when the application was filed and 17 years from when the data was collected to support the application. This does not seem to be an acceptable characterization of current conditions.

Response to Comment No. 21

As stated in the Fact Sheet, the previous permit was issued on September 18, 1987 and became effective after an appeal process on October 26, 1993. That permit expired 5 years later on October 26, 1998. However, EPA's regulations state, "[w]hen EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of the new permit ..." according to 40 C.F.R. §122.6(a). Therefore, the original permit remained and still remains in force until the Final Permit becomes effective.

To effectively implement the NPDES program, EPA prioritizes the reissuing of permits based on many factors and the resources available. This facility application has only recently been reviewed in detail based on reasons including, but not limited to, the length of time since the

permit expired. Other facilities also have expired permits and EPA is diligently trying to reissue these permits with the resources available.

Solutia's application was received by EPA on June 22, 1998. EPA agrees that the application contains information that, at the current time, may be out of date and that many changes have occurred to the facility since the application was received. In order to obtain current information about the facility, representatives from EPA and MassDEP conducted a site visit of the Solutia facility and met with the facility's Environmental Protection Lead on Monday, March 5th, 2007. In the meantime, Solutia has continued to operate under the Existing Permit and has submitted discharge monitoring reports (DMRs) to EPA since its expiration in 1998. The most recent data, collected from June 2003-March 2007, are presented in Attachment B of the Fact Sheet and are useful in characterizing the current conditions of the wastewater discharges from the facility. By using these data in the development of the Draft and Final Permits, EPA has not only relied on the 1998 permit application, but also on more recent representative sampling of Solutia's outfalls.

Comment No. 22

Table F-IV-1 in the 1998 permit application lists chemicals stored outside on site, and lists whether or not there is secondary containment for each chemical. There are a few chemicals listed that are stored in drums with no secondary containment. More information is needed about potential stormwater pathways for these chemicals. The fact sheet on page 7 indicates that some areas drain into the treatment system destined for the Springfield Water and Sewer Commission's treatment plant, but it is not clear if any of the chemicals stored on site without secondary containment would drain into the stormwater outfalls if there was a spill.

Response to Comment No. 22

EPA and MassDEP did not observe any potential storm water pathways to the NPDES discharge outfalls for chemicals stored outside during a site visit conducted on March 5, 2007. At that time, Solutia's Environmental Protection Lead indicated that drainage from areas containing chemicals was directed to the city sewer for treatment at Springfield Regional Waste Water Treatment Facility at Bondi Island. Regarding the potential drainage of chemicals to NPDES storm water outfalls, the facility states that, "Solutia routinely assesses the risk of outside chemical storage, any time we feel there is potential of chemical spillage to storm water drains, secondary containment has been provided or the material is relocated. We also have a long-standing and effective spill response program where any release from a primary container is immediately reported and investigated."

Comment No. 23

The permit application on page 2 describes a small dry weather flow of undetermined origin at outfall SF (now called 021S). Dye testing did not reveal the source. Tests determined no toxic substances. This all happened in 1998 – a decade ago – and it would be nice to have an update on this discharge.

Response to Comment No. 23

In response to this comment, Solutia conducted a visual observation in the Spring of 2008 and observed a small dry weather flow, supposedly from groundwater infiltration. According to the facility, no additional data has been gathered since 1998. However, extensive sampling was conducted at Bircham Bend Brook in 1985, 1987, 1995, and 1999 for the "RCRA Facility Investigation and Massachusetts Contingency Plan, Phase II" (available at http://www.epa.gov/region01/cleanup/rcra/105910.pdf). Groundwater samples were collected and analyzed for volatile organic compounds (VOCs), semi-volitile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and inorganic analysis from wells and storm water drains in the vicinity of Bircham Bend Brook. The RCRA investigation document states that groundwater "…was unlikely to be a significant contributor [of pollutants] to the constituent flux given the low or nondetected concentrations."

To gather updated information on the dry weather discharge from this outfall, the Final Permit contains monitoring requirements twice (2) a year for whole effluent toxicity, the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 and the 43 volatile and inorganic compounds listed in Table II (*Volatiles)* and III of Appendix D at 40 CFR Part 122. In addition, a full priority pollutant scan shall be completed within the first six months of the effective date of the permit (see Response to Comment No. 9.) After five years and ten (10) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

Comment No. 24

Are there any other dry weather flows at the stormwater outfalls? Has this been thoroughly researched?

Response to Comment No. 24

As described in the Fact Sheet, the only dry weather flows that discharge through NPDES outfalls are NCCW (through Outfalls 009 and 017) and uncontaminated groundwater (through Outfall 021S). Solutia has stated that there are no dry weather flows associated with any other storm water outfalls, including Outfalls 010S, 051S, 014S, 061S, 015S, 019S, and 020S. In the Existing Permit, Outfalls 014S and 015S were permitted to discharge NCCW in addition to storm water. Solutia has confirmed that neither of these outfalls contain NCCW and that the previous NCCW discharges were related to operations that no longer occur at the facility. The Final Permit has been clarified at Part I.A.8.l. to prohibit the discharge of contaminated groundwater.

Comment No. 25

Though the Fact Sheet states on page 7 that there is "no surface water discharge associated with the ongoing remediation activity," you stated in an email to me that drainage from the 21E area may be "to outfall 017 and perhaps other areas." We request that more assessment be done to understand stormwater patterns off the 21E site and to determine if the stormwater infrastructure

acts as a conduit for groundwater contaminants. After additional analysis, the permit may need to include testing requirements for pollutants of concern.

Response to Comment No. 25

The statement on page 7 of the Fact Sheet refers to the direct discharge of pumped and treated groundwater and not to the overland flow of storm water. According to Solutia, no groundwater is being extracted as part of the ongoing remediation activity and thus no remediated groundwater is discharged through the outfalls covered by this NPDES permit. The Final Permit contains a provision at Part I.A.8.l. that prohibits the discharge of contaminated groundwater under this permit (see Responses to Comments No. 26 and 30).

As indicated in the email, storm water drainage from the 21E area may be discharged through Outfall 017 as well as other storm water outfalls. EPA does not agree that this NPDES permit should require additional assessment of the storm water patterns and infrastructure. The Solutia Indian Orchard Plant is currently regulated under both the Resource Conservation and Recovery Act (RCRA) Corrective Action Program (through Region 1 of the USEPA) and the MassDEP's Bureau of Waste Site Cleanup per the Massachusetts Contingency Plan (MCP). The comprehensive site assessment of this facility, completed by these programs over the past 20 years, is presented in the RCRA Facility Investigation Summary Report and MCP Phase II Completion Statement (available online at http://www.epa.gov/region01/cleanup/rcra/105910.pdf). Existing and potential migration pathways were examined as part of this comprehensive site assessment and the assessment does not conclude that the storm water infrastructure is a conduit for groundwater contaminants. The report states that additional assessments will be conducted for certain areas of the site as part of a Corrective Measure Study (CMS)/MCP Phase III – Remedy Implementation Plan.

The majority of pollutants were not detected above the minimum detection levels in the priority pollutant scans submitted with the permit application. However, as stated in Response to Comment No. 9, EPA has modified the Final Permit to require wet weather monitoring of certain pollutants that were detected above the minimum detection level, although below the Federal Recommended Water Quality Criteria values. These pollutants include copper, cyanide, chloroform, methanol, dichlorobromomethane, chlorobenzene and the PCB's Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260. This requirement applies to all storm water outfalls. After five years and five (5) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

Comment No. 26

The RCRA cleanup document dated 6/28/07 (online at http://www.epa.gov/region01/cleanup/rcra/105910.pdf) indicates on page 6-27 that there is chlorobenzene associated with outfall pipes along the Chicopee River, relics from the former WWII naval research facility. There is also mention on page 7-4 of a potential migration pathway of PCBs from erosion to a storm drain to Bircham Bend Brook. Though the risk assessments indicate no risk, EPA should require stormwater testing for some of these chemicals associated with spills at the site.

Response to Comment No. 26

As indicated in Response to Comment No. 25, EPA has reviewed the RCRA document and is aware of the historical presence of chlorobenzene and PCBs at Solutia. The report documents the presence of a large groundwater plume containing chlorobenze beneath the facility. According to the report, this plume discharges directly to the Chicopee River without point source discharges subject to NPDES permitting. Monitoring requirements for chlorobenzene have been added to the Final Permit to ensure that chlorobenzene is not being discharged through the NPDES outfalls covered under this permit. These requirements apply to dry weather discharges from Outfalls 009, 017 and 021S and wet weather discharges from all storm water outfalls. Additionally, the Final Permit contains a provision, at Part I.A.8.l., which prohibits the discharge of contaminated groundwater through the outfalls covered under this permit.

Regarding PCBs, EPA has noted that there could be a potential migration pathway from erosion to a storm drain to Bircham Bend Brook. However, pages 6-8 of the aforementioned report states that PCBs were not detected in surface water in Bircham Bend Brook and that an analysis of sediment samples indicated that nearby areas had no effect on surface water or sediment. The only PCB contaminant mentioned to be present was Aroclor 1260, which was detected in estimated trace amounts of 0.00019 mg/kg in a culvert draining to the Brook. The application priority pollutant scan for Outfall 021S (previously Outfall SF) states that, as part of the RCRA corrective action program, an additional grab sample was taken in August 1994 where the "PCB Aroclor 1260 was detected below the method quantification limit and at an estimated value of 0.19 µg/l."

Although data indicates that PCBs have only been detected in trace amounts, based on the history of PCB production at this site, the persistent nature of this pollutant, and PCB's propensity for bioaccumulation, the Final Permit contains dry weather and wet weather monitoring requirements for the PCB's Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260. These monitoring requirements apply to all outfalls. After five years and five (5) results, the permittee may submit to EPA and MassDEP a written request for a permit modification of its monitoring requirements for any pollutant proven to be absent or in significantly low concentrations in the discharge.

Comment No. 27

EPA's online Toxics Release Inventory shows some releases to surface water from the site of several chemicals, including formaldehyde, methanol, and butyraldehyde as recent as 1994. There are no releases to surface water reported after 1995, which we assume means there have been no spills in more than a decade. However, there are several releases to land reported, apparently of lead compounds. It is unclear if there is any lead pathway to groundwater or stormwater.

Response to Comment No. 27

Based on this comment EPA has examined the Toxics Release Inventory (TRI) data and agrees that no releases to surface water have been documented after 1995. This does not necessarily indicate that there have been no spills since that time but rather that any spills either did not

reach a surface waterbody or did not contain a chemical or a quantity of a chemical that is required to be reported to EPA. According to Solutia, only two releases to surface water have occurred since 1995. The first of these was an oily sheen detected at Outfall 017 on April 21, 1995, which resulted from storm water washing residual oil off equipment in a dumpster that was to be removed by a recycling contractor. The second occurred in June 2006, when a sewer line became backed up as a result of torrential rain and ethanol, ethyl acetate, and acetic acid were released to the Chicopee River. EPA and MassDEP were informed of these incidents on both occasions and Solutia states that "In all cases material was collected and disposed of properly or flushed to the process sewer. In addition, the sewer line that overflowed was cleaned (hydroblasting) and returned to full operation."

Regarding lead pathways to groundwater or stormwater, priority pollutant scans submitted by the facility for Outfalls 017, 021S (SF), and 020S (SBS) do not show any concentrations of lead over the minimum detection limit. This data indicates that there is no lead pathway to either Bircham Bend Brook or the Chicopee River by storm water or groundwater through the NPDES outfalls. In addition, the RCRA EPA online report (see Responses to Comments No. 24 and No. 25) includes a risk-based environmental screening (ES) of exposure data for 1983 through 2005, which examined possible exposure pathways for lead. This report does not describe any documented pathways to groundwater or storm water and states that "…none of the surface-water, groundwater, or sediment constituents were associated with significant risk or harm to environmental receptors in the Chicopee River" (page 9-4).

Comment No. 28

The 7Q10 of 82.728 MGD (128 cfs) provided in Attachment E does not exactly match the 7Q10 from the existing permit (120 cfs = 77.4 MGD) or MassDEP's 1998 WQ Assessment for the Chicopee River Watershed, which shows a provisional 7Q10 of 125.963 cfs. Please check on the appropriate 7Q10 to use for dilution calculations.

Response to Comment No. 28

In response to this comment, EPA has re-evaluated the sources of the various 7Q10 estimates in order to select the most appropriate estimate for this permit. The Existing Permit, which was issued in 1987, does not include a source for the 120 cfs 7Q10 value. The MassDEP's 1998 Water-Quality Assessment for the Chicopee River Watershed indicates that the 7Q10 for USGS gage# 01177000 is 125.963 cfs (81.62 MGD). This gage is located 1,000 feet downstream from West Street near Indian Orchard. The source cited for this information is "USGS. 1998 Unpublished data. *Provisional low-flow frequency statistics for gaging stations. (*3.5" floppy disc). United States Geological Survey, Water Resourves Division. Marlborough, MA."

The 82.728 MGD (128 cfs) 7Q10 value, which was used in the Draft Permit, was calculated using the United States Geological Survey (USGS) Streamstats program. This program provides statistical information for waterbodies in Massachusetts and, according to the USGS website, "was developed in cooperation with the former Massachusetts Department of Environmental Management, now part of the Massachusetts Department of Conservation and Recreation. Additional support for StreamStats was provided by the Massachusetts Department of Environmental Protection and the Massachusetts Geographic Information System." The

program originally cited the source of this 7Q10 as "Wandle, S.W., Jr.,1984, Gazetteer of Hydrologic Characteristics of Streams in Massachusetts--Connecticut River Basin: U.S. Geological Survey Water-Resources Investigations Report 84-4282."

Based on the comment regarding different 7Q10 values found for the Chicopee River, EPA requested that USGS recalculate the 7Q10 for gage# 01177000 using the Streamstats program. The recalculated value, which utilizes data from April 1, 1929 through May 2008, is 125 cfs. Thus, the appropriate 7Q10 to use for dilution calculations at Solutia, Inc. is 125 cfs (80.79 MGD). The calculations from Attachment E, using the appropriate 7Q10 value of 125 cfs, are as follows:

Estimated downstream temperatures after mixing:

$$\text{Summer} = \frac{(6.0 \times 85) + (0.5 \times 83) + (80.79 \times 80)}{(6.0 + 0.5 + 80.79)} = \mathbf{80.36°F}$$

$$\text{Winter} = \frac{(6.0 \times 85) + (0.5 \times 83) + (80.79 \times 40)}{(6.0 + 0.5 + 80.79)} = \mathbf{43.34°F}$$

$$\text{Dilution Factor} = \frac{(6.0 + 0.5 + 80.79)}{(6.0 + 0.5)} = \mathbf{13.4}$$

Comment No. 29

I discussed this with you over the phone, but there appears to be a couple of errors in the tables in Attachment B as to whether the results reflect dry weather sampling or wet weather sampling.

Response to Comment No. 29

As confirmed by the facility, all data provided in Attachment B reflects dry weather sampling. The facility previously discharged NCCW not only from Outfalls 009 and 017, but also from Outfalls 015 (now 015S), 014 (now 014S) and 010 (now 10S). Also, the Existing Permit states that sampling for flow and temperature, at all outfalls, shall occur only during dry weather conditions. Based on the discharge of NCCW and the requirements in the Existing Permit, Attachment B reflects only dry weather sampling.

As described in the Fact Sheet and Response to Comment No. 23, Outfalls 010S, 014S and 015S no longer discharge NCCW and therefore, in the Final Permit, shall only be monitored during wet weather conditions.

Comment No. 30

The Region has apparently elected to treat the combined conveyance system at the facility as neither a storm water system nor a cooling water system, but rather something else that conveniently avoids the law applicable to those kinds of discharges. There is no other

explanation for its failure to tighten the technological and managerial requirements of this permit regarding either the temperature of the discharges or the volume and composition thereof as compared to the preceding permit. The facility is being allowed to dilute the array of chemical pollutants that it has routinely spilled and leaked into the ground water and surface areas of the facility with a huge volume of storm water (from the many acres of its impervious surfaces), in some cases possibly noncontact cooling water, and maybe groundwater as well, while it avoids most of the requirements for storm water systems under the Multi-Sector General Permit (MSGP) for industrial storm water discharges. The MSGP came into force (in 2000) almost two years after this permit application was filed. Of course, the MSGP's creation was over seven years ago today when the Draft Permit is finally being issued. Sadly, the MSGP's applicable requirements would actually be more stringent than the Draft Permit in several respects, including its express prohibitions on the discharge of any contaminated groundwater and its requirement that the discharger reduce pollutants discharged in storm water to "the maximum extent practicable" and that it so certify to EPA in the form of a "notice of intent." Most importantly, however, because some of the Draft Permit's principal "effluent limitations" for the combination cooling water and storm water-conveying outfalls are the SWPPP, the most stringent technology based effluent limitations in this Draft Permit are wholly unspecified and will remain so throughout the duration of this permit proceeding. Thus, the public is left to guess what the content of this permit will be. That is flatly inconsistent with the "public hearing" requirement of the Clean Water Act. See 33 U.S.C. §§ 1313, 1342; Environmental Defense Center, Inc v. EPA, 344 F.3d 832 (9th Cir. 2003).

Response to Comment No. 30

In response to this comment, EPA has attempted to clarify how the Final Permit adequately addresses both storm water and non-contact cooling water. EPA does not agree that the Draft Permit avoids the laws applicable to storm water or non-contact cooling water discharges nor that it is less stringent than the Existing Permit. EPA has modified the Final Permit to further clarify that it is as or more stringent than the Existing Permit and EPA's Stormwater Multi-Sector General Permit (MSGP) for Industrial Activities.

Significant changes were made from the Existing Permit in order to make the requirements more stringent. The Draft Permit contains wet weather monitoring requirements for total suspended solids, total recoverable zinc, and whole effluent toxicity testing, which were not included in the Existing Permit. In addition, non-contact cooling water outfalls contain new monitoring requirements for whole effluent toxicity and total residual chlorine. Furthermore, the Draft and Final Permits decrease the temperature limits from 90ºF to 83ºF for Outfall 009 and from 90ºF to 85ºF for Outfall 017. The requirement for the facility to write, implement, and update a storm water pollution prevention plan (SWPPP) is also a new, and more stringent, requirement that is included in the Draft and Final Permits. Finally, the Final Permit, as described in Responses to Comments No. 9 and 13, contains monitoring requirements, during both wet and dry weather, for zinc, copper, cyanide, chloroform, dichlorobromomethane, methanol, chlorobenzene and the PCB's Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

These effluent limits and elements of the SWPPP are at least as stringent as the 2000 MSGP, the 2006 proposed MSGP, and the 2008 final MSGP. All wet weather, storm water requirements in the Draft Permit were based upon the 2000 MSGP, the 2006 proposed MSGP, and applicable

water-quality standards. Furthermore, in preparation of the Final Permit EPA reviewed the recently finalized 2008 MSGP and concludes that the Final Permit requirements are at least as stringent as the 2008 final MSGP. Specifically, the SWPPP requirements in the Draft Permit directly require the permittee to meet the Sector C and Sector Y SWPPP requirements when developing the facility's SWPPP. In the MSGP, the individual sector SWPPP requirements also require a permittee to comply with the General SWPPP requirements in addition to the requirements listed for that sector. To clarify this point in the Final Permit, the language in Part I.B.8. has been modified to "The SWPPP shall also meet, to the maximum extent practicable, the general SWPPP requirements of the most current version of the MSGP. These are located at Part 5 of the 2008 MSGP."

Regarding contaminated groundwater, it was not EPA's intention to allow the discharge of contaminated groundwater under the Draft Permit. The results of the priority pollutant scans for Outfalls 017, 021S, and 020S that were submitted with the permit application, along with dilution from the receiving water, do not indicate the presence of pollutants above water quality standards. In addition, the facility states that there is no extraction, treatment, or discharge of groundwater associated with the on-going site remediation. However, in order to clarify the Final Permit, a provision has been added at Part I.A.8.l. which states that "The permittee is prohibited from discharging contaminated groundwater from any NPDES outfall." Furthermore, in order to provide additional data regarding the presence of contaminants in the discharges from the facility, the Final Permit requires dry weather monitoring of the groundwater discharge at Outfall 021S for whole effluent toxicity, the PCBs Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260 and the 43 volatile and inorganic compounds listed in Table II (*Volatiles)* and III of Appendix D at 40 CFR Part 122 (see Response to Comment No. 9.) When applicable, samples shall be analyzed using the test methods and minimum levels from Appendix VI of EPA's Remediation General Permit (RGP) and the permittee shall submit a laboratory copy of the case narrative along with the monthly DMR (see Part I.A.9.k. of the Final Permit). If results indicate a reasonable potential for the discharge to cause or contribute to a violation of water quality standards, EPA may reopen and modify the permit, in accordance with 40 C.F.R. §122.62 and §122.63.

Finally, the commentor suggests that the MSGP is more stringent than the Draft Permit because it requires a facility to certify, in the Notice of Intent (NOI), that they have reduced pollutants discharged to storm water to "the maximum extent possible". The Draft Permit contains a similar requirement in the form of initial certifications, re-certifications, and annual certifications for the SWPPP. To clarify that the Final Permit requires the permittee to reduce pollutants to the maximum extent practicable, Part I.B.2. has been modified from "The permittee shall certify that the SWPPP has been completed or updated and that it meets the requirements of the permit" to "The permittee shall certify that the SWPPP has been completed or updated, that it meets the requirements of the permit, and that it reduces the pollutants discharged in storm water to the maximum extent practicable." This certification must be sent to MassDEP and EPA within 120 days of the effective date of the permit and must be maintained with the SWPPP.

Comment No. 31

The Fact Sheet goes into some depth discussing the potential impacts of the permitted discharges upon the endangered shortnose sturgeon resident in the Connecticut River. The Region

concludes that, in issuing this Draft Permit, it has met its obligation under Endangered Species Act (ESA) Section 7 to insure that its action does not "jeopardize the continued existence or result in the destruction or adverse modification of critical habitat of" the shortnose sturgeon. 16 U.S.C. §1536(a)(4). Unbelievably, after the Region concedes that shortnose sturgeon have a documented presence in the Chicopee River, it finds that the Draft Permit does not even raise enough doubt about the potential effects on this species to initiate a consultation with the U.S. Fish and Wildlife Service pursuant to ESA § 7(a)(3). 16 U.S.C. § 1536(a)(3). Indeed, the Region even reasons, quite dubiously, that this jeopardy standard is not triggered because "[n]o shortnose sturgeon spawning activity is thought to occur in the Chicopee River" and because "[a]ny shortnose sturgeon found in the Chicopee River will likely be moving past the facility as they forage for food . . . or come in direct contact with the near-bank surface discharge of the facility." Fact Sheet at 15. The courts have overwhelmingly, repeatedly, and emphatically rejected reasoning like this in the context of ESA § 7 "biological assessments." See, e.g., Natural Resources Defense Council v. Houston, 146 F.3d 1118 (9th Cir. 1998); American Rivers v. U.S. Army Corps of Engineers, 271 F.Supp.2d 230 (D.D.C. 2003). The Draft Permit, consequently, proposes to leave in place a status quo that is simply objectionable under the Clean Water Act, the Endangered Species Act, and applicable state water quality law.

Response to Comment No. 31

EPA does not agree with the commentor's characterization of the actions taken by EPA as part of the proposed permit to comply with the Endangered Species Act (ESA). The commentor correctly points out, "The Fact Sheet goes into some depth discussing the potential impacts of the permitted discharges upon the endangered shortnose sturgeon resident in the Connecticut River." However, the commentor is in error when the commentor states "...it [EPA] finds that the Draft Permit does not even raise enough doubt about the potential effects on this species to initiate a consultation with the U.S. Fish and Wildlife Service pursuant to ESA § 7(a)(3). 16 U.S.C. §1536(a)(3)." First, EPA would like to note, as is stated in the Fact Sheet, that the National Marine Fisheries Service (NMFS), not the U.S. Fish and Wildlife Service, administers Section 7 consultations for marine species and anadromous fish (i.e. shortnose sturgeon). Second, the Fact Sheet states that EPA had made a "preliminary determination" and put for a "finding" that the proposed permit is not likely to adversely affect the shortnose sturgeon or its critical habitat. These are not conclusions, and the Fact Sheet went on state that a review of EPA's finding was being coordinated with NMFS through the Draft Permit, the Fact Sheet, and an interagency letter. Since the publication of the Draft Permit and Fact Sheet, NMFS has had the opportunity to review EPA's finding regarding the affect of the proposed permit on shortnose sturgeon in the Chicopee River. NMFS concurred with EPA's preliminary determination that the proposed reissuance of the permit is not likely to adversely affect shortnose sturgeon. A copy of the interagency letter regarding this informal consultation sent from EPA to NMFS and the letter from NMFS to EPA, dated February 11, 2008, is part of the administrative record for this permit.

Comments from Solutia Inc. (RECEIVED LATE)

Comment No. 32

Outfall 009 and Outfall 017 require monthly sampling for flow. With only one data point for the month, how is the average flow calculated? If the one data point is reported as the average, why are the average monthly flow and maximum daily flow the same?

Response to Comment No. 32

The monitoring frequencies included in the Draft Permit are minimum requirements and, at any time, Solutia may choose to sample more frequently. If the facility collects one sample during a month, then the flow rate for that sample shall be recorded as both the daily maximum and monthly average value. However, if samples from more than one day are collected then the highest of these values shall be recorded as the daily maximum and the average of these values shall be recorded as the monthly average. As stated in Part I.A.8(i) of the Final Permit, "The results of sampling for any parameter above its required frequency must also be reported, in accordance with 40 C.F.R. §122.41(l)(4)(ii)."

Comment No. 33

Outfall 009 is difficult to access and will be especially dangerous in wet weather; sampling during wet conditions will be unsafe.

Response to Comment No. 33

The Final Permit has been modified to require wet weather sampling for Outfall 009 at catch basins 561 and 573 instead of at the discharge point (see Response to Comment No. 7). These locations have been identified by the facility as both safe and representative of the discharge. The discharge at catch basin 561 contains the non-contact cooling water as well as storm water from one portion of the Outfall 009 drainage area. Catch basin 573 captures storm water from the remaining Outfall 009 drainage area on the Solutia property. The discharge from these two catch basins commingles prior to the discharge point to the Chicopee River.

Dry weather sampling shall occur at the discharge point to the Chicopee River, as described in the Draft Permit. Dry weather sampling is only required from March – November, inclusive.

Comment No. 34

Outfall 10S, 51S, 14S, 15S, 61S, and 19S are all permitted for storm water only. These outfalls are also difficult to access and will be especially dangerous in wet weather; sampling during wet conditions will be unsafe.

Response to Comment No. 34

EPA acknowledges that these outfalls are difficult to access and that sampling during wet conditions may be unsafe. This is reflected in the description of the of the representative outfall

sampling schedule in Footnote 1 of Part I.A.5., in which the Draft Permit allows Solutia to chose either the discharge point to the Chicopee River or a specified catch basin as the sample location for these six outfalls. This language shall be retained in the Final Permit.

Comment No. 35

For the Effluent Limitations and Monitoring Requirements for Outfall 009 and 017 in Wet Weather, Footnote 5 indicates quarterly sampling shall be done concurrently with the yearly monitoring event. This is not possible as the quarterly testing must be done in wet weather and the yearly done in dry.

Response to Comment No. 35

EPA acknowledges this contradiction in the Draft Permit. As discussed in Response to Comment No. 15, a yearly requirement for wet weather whole effluent toxicity (WET) testing has been added for Outfalls 009 and 017 in the Final Permit. Therefore, the language of Footnote 5 shall be retained in the Final Permit.

Comment No. 36

Part I.A.10c: This section requires Solutia, Inc. to report any new chemical used which was not included in the original permit application. This is not practical, as we are a large manufacturing facility with many process and maintenance chemicals which change frequently. In addition, we have an on-site R&D facility who trails a very large number of chemicals, many of which are in very small quantities.

Response to Comment No. 36

EPA has clarified the language of Part I.A.10.c. so that the facility is only required to notify the director of new chemicals used which were not included in the original permit application if the use of that chemical may contribute to a discharge of pollutants to waters of the United States. This includes chemicals that are stored, used, or transferred in outside, uncovered areas.